

TRANSREFLECTOR ANTENNA FOR  
WIRELESS COMMUNICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

A compact lightweight antenna for receiving microwave direct line of sight  
5 wireless data signals used in services such as Local Multipoint Distribution Services  
(LMDS). The antenna provides for precise control over isolation of polarized signals.  
The antenna consists of an external parabolically shaped dome formed of a suitably  
resilient material such as thermoplastic. A polarizing conductive grating is formed on  
the interior surface of the dome and serves as a transreflector for initially passing  
10 received radiation having a vertical polarization. A twist reflector disposed at a point  
along an axis defined by the conductive grating reflects the received radiation, back in  
the direction of the transreflector with a different polarization. The now differently  
polarized energy is reflected by the parabolically shaped conductive grating at a feed  
point located in the center of the twist plate. The transreflecting element may be  
15 manufactured by providing a substrate that has been printed and etched and/or a film  
nonconductive substrate which has been silk screened with a conductive ink. In each of  
these cases in a preferred embodiment, the substrate or carrier film becomes an integral  
part of the mold in the resulting article.

20081035 03210